

REMARKS

Claims 2-7 and 29 are in the application, with claims 1 and 8-28 having been cancelled and new claim 29 having been added. Claim 2 has been amended and is the only independent claim now presented. No new matter has been added. Reconsideration and further examination are respectfully requested.

Claim Rejections – 35 USC § 102(b)

Claim 2 is rejected as being anticipated by Johnston, U.S. Patent No. 4,675,627 (“Johnston”).

Claim 2 has been rewritten in independent form and has been further amended to recite that the signal traces are formed directly on the substrate. Support for this amendment is found in FIG. 1, which shows signal traces 42 formed directly on the dielectric layer 34. Thus claim 2 as now presented is directed to an “apparatus” which includes “a substrate” and “a pair of signal traces formed directly on the substrate and spaced from each other”. The apparatus of claim 2 further includes “a filler material on the substrate and between the signal traces”. In addition, claim 2 recites that “the filler material ha[s] a dielectric constant that is higher than a dielectric constant of a material of which the substrate is formed”. Also, the apparatus of claim 2 includes “a solder mask layer on the signal traces and on the filler material”, and claim 2 further recites, “the dielectric constant of the filler material [is] higher than a dielectric constant of the solder mask layer”.

Applicants submit that as now presented claim 2 is distinguished from the Johnston reference in at least three respects.

First, claim 2 recites a solder mask layer on the signal traces and on the filler material, but Johnston lacks such a solder mask layer. In the present Office Action, the Examiner referred to element 102 in FIG. 15B of Johnston as a “solder mask layer”, but actually the reference itself refers to this element as a “dielectric substrate layer” (column 7, lines 62-63), and the reference does not state that the dielectric substrate layer is, or could function as, a solder mask layer.

Second, claim 2 recites a pair of signal traces that are spaced from each other, but Johnston also lacks this feature. Although the Examiner referred to “signal traces 104/106” in explaining this rejection, in fact element 106 in Johnston is a ground plane (see column 7, line 65), not a signal trace. One of ordinary skill in the art would understand a ground plane to serve a different function and to be a different kind of structure from a “signal trace”.

Third, claim 2 recites a filler material that is between the signal traces and has a higher dielectric constant than the substrate on which the signal traces are directly formed. Johnston does not show this structure. In Johnston’s FIG. 15B a layer of material 108 is between the signal trace 104 and the dielectric layer 102, and this same material 108 is between the signal trace 104 and the ground plane 106. Thus the “filler material” in Johnston is the same as the layer on which the signal trace 104 is directly formed, and the signal trace 104 is not directly formed on the dielectric layer 102 which has a lower dielectric constant than the filler material 108.

For all of these reasons it is submitted that claim 2 is allowable over the Johnston reference.

Claim Rejections – 35 USC § 102(e)

Claims 3-7 are rejected as being anticipated by Roth et al., U.S. Publication No. 2004/0119147 (“Roth”).

It is believed this rejection is now moot in view of the above amendments which made claims 3-7 dependent on claim 2. Claim 2 was not rejected in reliance on the Roth reference, and Roth fails to disclose the “solder mask layer” recited in claim 2. It is therefore requested that the rejection of claims 3-7 be reconsidered and withdrawn.

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A new claim 29 has been added. Claim 29 is dependent on claim 2 and adds the limitation that the filler material includes polyvinylidene difluoride. Support for this feature is found at page 5, lines 8-9 of the specification.

It is believed that claim 29 is allowable over the art relied upon by the Examiner for the reasons stated above with respect to claim 2. Furthermore, the references relied upon by the

Examiner fail to disclose a filler material that includes polyvinylidene difluoride. Thus claim 29 is believed allowable on grounds that are independent of the allowability of claim 2.

CONCLUSION

Accordingly, Applicants respectfully request allowance of the pending claims. If any issues remain, or if the Examiner has any further suggestions for expediting allowance of the present application, the Examiner is kindly invited to contact the undersigned via telephone at (203) 972-3460.

Respectfully submitted,



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Date

Nathaniel Levin
Registration No. 34,860
Buckley, Maschoff & Talwalkar LLC
Five Elm Street
New Canaan, CT 06840
(203) 972-3460